

Amendments to the Claims:

11. (previously presented) A cylinder assembly for a twin-screw extruder, comprising a cylinder having a variable wall thickness defining an extrusion space for receiving twin screws of the twin-screw extruder and a hollow-cylinder mantle surrounding the cylinder, wherein at least one channel having a helical shape and a cycle depth is formed on an outer side of the cylinder by a winding vortex process and an inlet and outlet are formed in the hollow-cylinder mantle in communication with the at least one channel for allowing a flow of a tempering medium from the inlet to the outlet via the at least one channel, the hollow-cylinder mantle closing the at least one channel, and wherein the cycle depth of the at least one channel varies along the circumferential direction of the cylinder such that the cycle depth is largest in regions where the wall thickness of the cylinder is largest and the cycle depth is smallest in regions where the wall thickness of the cylinder is smallest.

12. (previously presented) The cylinder assembly of claim 11, wherein said at least one channel comprises a plurality of channels.

13. (currently amended) The cylinder assembly of claim 11, wherein a pitch of said channels said at least one channel along a longitudinal direction of the cylinder is constant.

14. (previously presented) The cylinder assembly of claim 11, wherein the at least one channel comprises a rectangular cross-section.

15. (previously presented) The cylinder assembly of claim 11, wherein the cylinder also forms bridges between adjacent windings of the at least one channel having a width in the longitudinal direction, the width of the at least one channel being in the range including 0.7 to 1.2 times the width of the bridge bridges.

16. (previously presented) The cylinder assembly of claim 11, wherein the at least one channel has a variable cycle depth having a largest cycle depth and a smallest cycle depth, the largest cycle depth being within the range of 3 to 5 times the smallest cycle depth.

17. (previously presented) The cylinder assembly of claim 11, wherein the at least one channel has side walls arranged so that the width of the at least one channel increases from a radially inner portion to a radially outer portion of the at least one channel.

18. (previously presented) The cylinder assembly of claim 17, wherein the side walls are arranged at an angle relative to one another, the angle being within the range including 8-15 degrees.

19. (currently amended) The cylinder assembly of claim 11, wherein the cylinder also forms bridges between adjacent windings of the at least one channel, wherein an average thickness of the bridges between two adjacent windings of the at least one channel is in the range of 1.5 to 4 times the average width of the channels at least one channel.

20. (currently amended) The cylinder assembly of claim 11, wherein said cylinder further comprises circumferential grooves respectively arranged proximate opposing ends of the cylinder such that said at least one ~~channels~~ channel opens into said circumferential grooves, and each of the inlet and outlet in the hollow-cylinder mantle open into one of the circumferential grooves.